ASPERGILLOSIS IN WILD HERRING GULLS

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Pulmonary infections with *Aspergillus fumigatus* are well known in domestic fowls or wild birds confined in zoölogical gardens, but the occurrence of such an infection in wild Herring Gulls (*Larus argentatus* var. *smithsonianus*) seems worthy of mention.

During October, 1939, it was reported that gulls in the region of the East Boston airport were afflicted with a fatal disease. This airport is situated on low ground which projects into Boston Harbor. Its outer portion is overgrown with tall grass and weeds, and in this season has several shallow pools containing decaying vegetation. These pools are filled by rain, but become flats of caked mud in dry weather. Investigation of this area revealed the presence of about 20 dead gulls and a flock of about 200 live birds. When approached the flock rose slowly; several birds had difficulty in getting into the air. An agent of the S. P. C. A. stated that he had removed more than 60 birds which were dead or moribund. Three birds which were too weak to fly were examined. They showed emaciation and extreme weakness, but no specific neurological signs or evidence of trauma.

Autopsies were performed on five birds soon after death. All showed lesions of the lungs. In two birds, no lungs could be identified grossly. Instead, there were spaces lined with granulomatous tissue and tubercle-like nodules. The cavities showed many greenish-grey patches of mold, which gave off clouds of spores when touched. These birds also had tubercle-like patches of mold in the peritoneal cavity and on the liver, and a sporulating

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colony was found on one kidney. In three other birds, the lungs showed necrotic areas and a watery greenish exudate. Pure cultures of the mold were grown on Sabouraud's agar incubated at 37°C. and identified as *Aspergillus fumigatus*. A culture was sent to Dr. Charles Thom, of the United States Department of Agriculture, to whom we are indebted for confirmation of the identification. No organism was recovered from the heart's

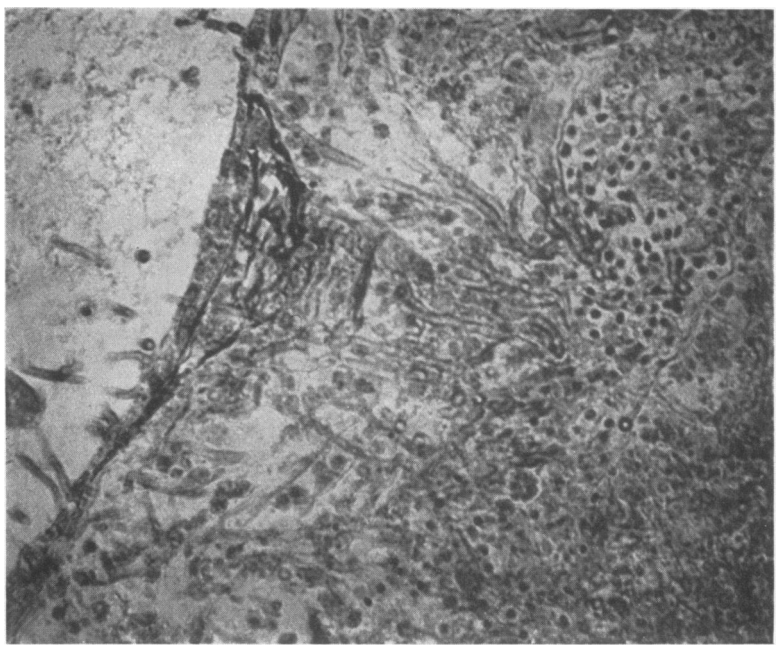

FIG. 1. SECTION OF LUNG OF HERRING GULL (LARUS ARGENTATUS VAR. SMITHSONIANUS) STAINED WITH HEMATOXYLIN EOSIN

Mycelia of *Aspergillus fumigatus* are present in the necrotic tissue and are invading an alveolar space. Magnification × 900.

blood or brain cultured on blood agar, and, similarly, intracerebral inoculation of Swiss mice and sparrows with heart's blood and brain revealed no pathogenic agent in these tissues. Sections of the lungs showed acute granulomatous lesions with central necrosis containing mycelia (fig. 1). A subacute inflammatory reaction surrounded these areas of necrosis with infiltration of many mononuclear cells and polymorphonuclear leucocytes. Sections

of the bronchi also showed similar inflammatory response. Zenker's fixed sections stained with Ziehl-Neelson's carbol fuchsin failed to reveal the presence of tubercle bacilli. Thus we conclude that this outbreak constitutes an example of aspergillosis in wild fowl.

Although *Aspergillus fumigatus* is ubiquitous in nature, a history of unusual exposure to decomposing vegetation is usually obtained in cases of aspergillosis (Henrici, 1930; Thom and Church, 1926; Hutrya and Marek, 1913). Human infection occurs chiefly in the "gaveurs des pigeons" of Paris, or in those exposed to moldy flour. The disease is commonly found in fowls which have been given moldy straw for bedding, or which are confined to pens with decaying vegetation. Nearly all the infected gulls were in the second or third-year plumage. Gulls of this age spend the summer in Boston Harbor, feeding at garbage dumps and serving as general scavengers along the shore. Workmen at the airport stated that flocks of gulls spent the night in the grass; this statement was confirmed by the abundant feathers and droppings among the grasses and around the pools. Thus it is possible that the birds had been exposed to decaying vegetation for several months, both at their feeding place and at night.

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